

REMARKS

Claims 1-7, 10-54, 57-68, and 72-85 were pending prior to this Response, with claims 1-7, 10-54, 57, 59-68, and 72-79 having been withdrawn from further consideration. By the present communication, no claims have been added, claims 1 and 80 have been amended, and claims 1-7, 10-54, 57, and 73-79 have been canceled without prejudice. Support for the amended claim language may be found, among others, at page 48, lines 4-22 of the application as filed. Accordingly, upon entry of this communication, claims 58 and 80-85 will be under consideration.

Rejection under 35 U.S.C. §103

Applicants respectfully traverse the rejection of claim 58 under 35 U.S.C. §103(a) as allegedly being unpatentable over Vigne et al. (US Patent 6,455,314; hereinafter, "Vigne") in view of Hallenbeck et al. (US Pub No. 2002/0137213; hereinafter, "Hallenbeck"). The U.S. Supreme Court decision in the *KSR International v. Teleflex Inc.* (82 USPQ2d 1385), modified the standard for establishing a *prima facie* case of obviousness. Under the *KSR* rule, three basic criteria are considered. First, some suggestion or motivation to modify a reference or to combine the teachings of multiple references still has to be shown. Second, the combination has to suggest a reasonable expectation of success. Third, the prior art reference or combination has to teach or suggest all of the recited claim limitations. Factors such as the general state of the art and common sense may be considered when determining the feasibility of modifying and/or combining references.

The Office Action alleges that Vigne describes targeted adenovirus vectors for delivery of heterologous genes, wherein modifications of the internal sites of the adenovirus fiber protein that include short targeting peptides fused to the C-terminus of the fiber protein, or the fiber HI loop (knob) target the modified adenoparticles to specific cell types. According to the Action, Vigne teaches mutations that encompass a substitution or replacement of the Ad5 shaft with Ad3, thereby comprising a modification in the last full repeat of the fiber shaft.

As amended claim 58 requires an adenoviral particle comprising a modification to a fiber shaft protein, “wherein the modification is a wherein the modification is a mutation, insertion or replacement of at least one amino acid at contiguous amino acids corresponding to the amino acid sequence set forth in SEQ ID NO: 49 in a fiber shaft β -repeat corresponding to the last full β repeat, and wherein the fiber further comprises a modification in the AB loop or the CD loop of the fiber knob, wherein the fiber knob modification is selected from the group consisting of K01 and K012, whereby binding of the modified fiber or of a viral particle containing such modified fiber to the Coxsackie-Adenovirus Receptor (CAR) is reduced as compared to the unmodified fiber”. Applicants respectfully submit that Vigne fails to teach or suggest a modified adenovirus fiber wherein the modification is within SEQ ID NO: 49 in a fiber shaft β -repeat corresponding to the last full β repeat.

The Office Action indicates that Vigne does not specifically describe the K01 fiber knob mutation, and therefore relies upon Hallenbeck for describing such a mutation. However, Applicants respectfully submit that Hallenbeck fails to teach or suggest a modified adenovirus fiber wherein the modification is within SEQ ID NO: 49 in a fiber shaft β -repeat corresponding to the last full β repeat. Thus, the teachings of Vigne, either alone or in combination with Hallenbeck, do not teach or suggest all of the recited claim limitations, do not supply a motivation to combine the cited references, and do not provide an expectation of success in achieving the claimed invention. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established for the invention as described in the amended claims, and requests withdrawal of the rejection.

Applicants respectfully traverse the rejection of claims 58 and 80-82 under 35 U.S.C. §103(a) as allegedly being unpatentable over Vigne in view of Hallenbeck and further in view of Havenga et al. (US Pub No. 2003/0017138; hereinafter, “Havenga”). The arguments provided above with respect to Vigne and Hallenbeck apply equally and are incorporated here. The Office Action indicates that Vigne and Hallenbeck do not specifically describe the serotype D Ad37 virus having the sequence set forth as SEQ ID NO: 48. The Office Action relies upon Havenga

for allegedly disclosing that chimeric adenoviruses containing a genome derived in part from an adenovirus of subgroup D.

Applicants submit that even if one of skill in the art would have combined Vigne and Hallenbeck in view of Havenga, the resulting composition would not result in an adenoviral particle comprising a modification to a fiber shaft protein, wherein the modification is a mutation, insertion or replacement of at least one amino acid at contiguous amino acids corresponding to the amino acid sequence set forth in SEQ ID NO: 49 in a fiber shaft β -repeat corresponding to the last full β repeat. Since Havenga fails to disclose SEQ ID NO: 49 or further modifications to a fiber shaft β -repeat corresponding to the last full β repeat, Applicants respectfully submit that the combined references fail to teach or suggest all of the recited claim limitations, do not supply a motivation to combine the cited references, and do not provide an expectation of success in achieving the claimed invention. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established for the claimed invention, and requests withdrawal of the rejection.

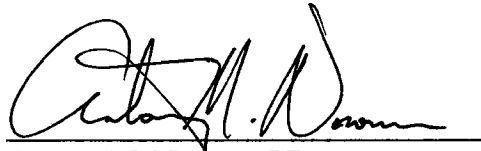
Applicants respectfully traverse the rejection of claims 58, 83, and 85 under 35 U.S.C. §103(a) as allegedly being unpatentable over Vigne in view of Kaleko et al. (US Pub No. 2003/0017138; hereinafter, "Kaleko"). The arguments provided above with respect to Vigne apply equally and are incorporated here. The Office Action indicates that Vigne does not specifically describe the KO12 fiber knob mutation, and relies upon Kaleko for allegedly disclosing such a mutation. However, Applicants respectfully submit that Kaleko fails to teach or suggest a modified adenovirus fiber wherein the modification is within SEQ ID NO: 49 in a fiber shaft β -repeat corresponding to the last full β repeat. Thus, the teachings of Vigne, either alone or in combination with Kaleko, do not teach or suggest all of the recited claim limitations, do not supply a motivation to combine the cited references, and do not provide an expectation of success in achieving the claimed invention. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established for the invention as described in the amended claims, and requests withdrawal of the rejection.

Conclusion

In view of the foregoing amendments and the remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicants' undersigned representative if there are any questions relating to this case.

The Commissioner is hereby authorized to charge the total amount of \$1,030.00 as payment for the Petition for Two-Month Extension of Time fee (\$490) and for the Notice of Appeal fee (\$540) to Deposit Account No. 07-1896. No other fees are believed to be due in connection with the filing of this paper. However, the Commissioner is hereby authorized to charge any fees that may be due, or credit any overpayments to Deposit Account No. 07-1896 referencing the above-identified attorney docket number.

Respectfully submitted,



Antony M. Novom, J.D.
Registration No.: 45,517
Telephone: (858) 638-6641
Facsimile: (858) 677-1465

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DLA PIPER LLP (US)
4365 Executive Drive, Suite 1100
San Diego, CA 92121-2133
USPTO CUSTOMER NO.: 28213